

REMARKS

In the Office Action dated June 19, 2002, the Examiner rejected claims 1, 3-14, 18-24 and 28-33, but indicated that claims 2, 15, 16, 25, 26 and 27 are allowable and objected to as being based on rejected base claims.

Claims 1-10, 12-16 and 18-33

Applicants have canceled claims 1, 3-10, 12-14, 18-24, and 28-33 without prejudice. Applicants have amended claims 2, 15, 25, and 26 so as to not be based upon a rejected claim, noting that claims 16 and 27 are dependent upon claims 15 and 26, respectively, and, therefore, do not need to be amended. Therefore, Applicants respectfully request withdraw of the objection to these claims and allowance of same.

New claims 34-76

New claims 34-76 are presented for examination. Claims 34, 50 and 65 are independent claims. In particular, claim 34 includes the limitation of:

“establishing a methane fermentation zone within a pond having a substantially open surface ...”

This limitation is not taught or suggested by GUY or DESJARDINS. Both GUY and DESJARDINS teach the establishment of anaerobic zones within septic tanks, which do not have a substantially open surface. Neither GUY or DESJARDINS disclose any motivation or advantage of establishing methane fermentation zones within a pond that has a substantially open surface. Accordingly, it is respectfully submitted that claim 1 and its dependent claims are not anticipated or rendered obvious in view of GUYS or DESJARDINS.

Claim 50 includes the limitation of:

“establishing methane fermentation within a fermentation pit that is covered by at least partially photosynthetically oxygenated wastewater of a pond...”

This limitation is not taught by GUY or DESJARDINS. Neither GUY or DESJARDINS disclose any motivation or desirability of establishing methane fermentation zones within a pit that is covered by at least partially photosynthetically oxygenated wastewater. Accordingly, it is respectfully submitted that claim 50 and its dependent claims are not anticipated or rendered obvious in view of GUYS or DESJARDINS.

Claim 60 includes the limitation of:

“forming one or more inner ponds within an outer pond, said outer pond having a *substantially open surface*...”

As discussed earlier, both GUY and DESJARDINS teach the establishment of anaerobic zones within septic tanks, which do not have a substantially open surface. Neither GUY or DESJARDINS disclose any motivation or advantage of establishing methane fermentation zones within a pond that has a substantially open surface. Accordingly, it is respectfully submitted that claim 65 and its dependent claims are not anticipated or rendered obvious in view of GUYS or DESJARDINS.

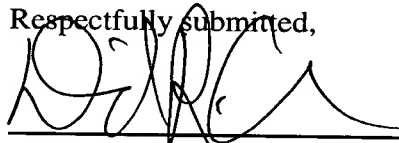
Conclusion

In view of the foregoing, Applicants respectfully submit that all pending claims are allowable and an expedited allowance would be greatly appreciated. The Examiner is encouraged to contact the undersigned representative to resolve any outstanding issues. Attached hereto is a Version With Markings to Show Changes to show changes made to the claims.

If there are any fees or credits due in connection with the filing of this Amendment, including any fees required for an Extension of Time under 37 C.F.R. § 1.136, authorization is given to charge any necessary fees to our Deposit Account No. 16-1150 (order no. 9840-0041-999). This page is submitted in duplicate for such purpose.

Date November 19, 2002

Respectfully submitted,



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40,756

(Reg. No.)

31,066

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Claim 60 includes the limitation of:

"forming one or more inner ponds within an outer pond, said outer pond having a *substantially open surface*..."

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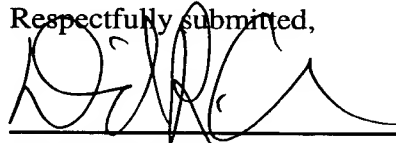
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VERSION WITH MARKINGS TO SHOW CHANGES

Claims 2, 15, 25, and 26 have been amended as follows:

2. (Amended Once) [The] A method of [claim 1] disposing waste, said method comprising the steps of:

forming a primary waste pond within an outer pond; and
establishing a stable microbiological methane fermentation zone within said primary waste pond;

wherein said forming step includes the step of forming several primary waste ponds within said outer pond.

15. (Amended Twice) [The] A method of [claim 1] disposing waste, said method comprising the steps of:

forming a primary waste pond within an outer pond; and
establishing a stable microbiological methane fermentation zone within said primary waste pond;

[further comprising the step of gas capturing, said gas capturing comprising the steps of:]

collecting a gas emitted from said methane fermentation zone in a submerged gas collector;

transporting said gas by way of a central mast pipe; and

collecting said gas in a gas cap.

25. (Amended Twice) [The] A method of [claim 24] disposing waste, said method comprising:

forming one or more inner ponds within an outer pond;
establishing one or more stable microbiological methane fermentation zones within said one or more inner ponds;

wherein said establishing step includes creating a stable microbiological methane fermentation zone comprising facultative heterotrophic bacteria and methane bacteria,

creating a stable microbiological methane fermentation zone comprising facultative heterotrophic bacteria and methane bacteria, and

[wherein said establishing step further comprises] causing said facultative heterotrophic bacteria and methane bacteria to produce a gaseous emission comprising about 70% methane.

26. (Amended Twice) [The] A method of [claim 18 further] disposing waste, said method comprising:

forming one or more inner ponds within an outer pond;

establishing one or more stable microbiological methane fermentation zones within said one or more inner ponds

collecting a gas emitted from said methane fermentation zone in a submerged gas collector;

transporting said gas by way of a central mast pipe; and

collecting said transported gas in a gas cap.

New claims 34-76 have been added as follows:

34. (New) A method for treating wastewater, comprising:

establishing a methane fermentation zone within a pond having a substantially open surface, wherein said methane fermentation zone is disposed below said open surface; and

feeding wastewater into said methane fermentation zone.

35. (New) The method of claim 34, wherein said establishing comprises establishment of a second methane fermentation zone within said pond.

36. (New) The method of claim 34, wherein said establishing comprises establishment of a methane fermentation zone within a pond comprising aerobic wastewater.

37. (New) The method of claim 34, further comprising generating free molecular oxygen in said pond from growth of microalgae.

38. (New) The method of claim 34, wherein said establishing comprises establishment of said methane fermentation zone comprising semi-solid material in a highly reduced state to facilitate conversion to methane.

39. (New) The method of claim 34, further comprising deflecting oxygen from said methane fermentation zone.

40. (New) The method of claim 39, wherein said deflecting comprises deflecting oxygen to reduce intrusion of dissolved oxygen from said pond into said methane fermentation zone.

41. (New) The method of claim 34, wherein said establishing comprises establishment of said methane fermentation zone comprising settleable solids, facultative heterotrophic bacteria and methane bacteria.

42. (New) The method of claim 41, wherein said establishing comprises converting at least part of said settleable solids by said facultative heterotrophic bacteria and said methane bacteria into products including a gaseous emission.

43. (New) The method of claim 41, wherein said establishing comprises converting at least part of said settleable solids by said facultative heterotrophic bacteria and said methane bacteria into products including a gaseous emission comprising about 70% or more methane.

44. (New) The method of claim 34, wherein said establishing comprises establishment of said methane fermentation zone having a top surface area no greater than approximately 0.09 hectare.

45. (New) The method of claim 44, wherein said establishing comprises establishment of a methane fermentation zone having a depth of approximately 6 to 8 meters.

46. (New) The method of claim 45, wherein said establishing comprises establishment of said methane fermentation zone within a pond, said pond having a depth of approximately 4 to 6 meters.

47. (New) The method of claim 34, wherein said methane fermentation zone comprises a bottom that is lower than a bottom of said pond.

48. (New) The method of claim 34, further comprising oxidizing gaseous hydrogen sulfide emissions from said methane fermentation zone using aerobic wastewater in said pond to form sulfates.

49. (New) The method of claim 34, wherein said wastewater flows out of said methane fermentation zone in an upward direction.

50. (New) A method of treating wastewater, comprising:
establishing methane fermentation within a fermentation pit that is covered by at least partially photosynthetically oxygenated wastewater of a pond; and
feeding wastewater into said fermentation pit.

51. (New) The method of claim 50, wherein said establishing comprises establishment of methane fermentation within said fermentation pit within said pond.

52. (New) The method of claim 50, wherein said establishing comprises establishment of methane fermentation within said fermentation pit that comprises semi-solid material in a highly reduced state to facilitate conversion to methane.

53. (New) The method of claim 50, further comprising deflecting oxygen from said fermentation pit.

54. (New) The method of claim 53, wherein said deflecting comprises deflecting oxygen to reduce intrusion of dissolved oxygen said pond into said fermentation pit.
55. (New) The method of claim 50, wherein said establishing comprises establishment of said methane fermentation zone comprising settleable solids, facultative heterotrophic bacteria and methane bacteria.
56. (New) The method of claim 55, wherein said establishing comprises converting at least part of said settleable solids by said facultative heterotrophic bacteria and said methane bacteria into products including a gaseous emission.
57. (New) The method of claim 55, wherein said establishing comprises converting at least part of said settleable solids by said facultative heterotrophic bacteria and said methane bacteria into products including a gaseous emission comprising about 70% or more methane.
58. (New) The method of claim 50, wherein said establishing comprises establishment of methane fermentation within an open pit that has a top surface area no greater than approximately 0.09 hectare.
59. (New) The method of claim 58, wherein said establishing comprises establishment of a fermentation zone having a depth of approximately 6 to 8 meters.
60. (New) The method of claim 59, wherein said establishing comprises establishment of methane fermentation within a pond that has a depth of approximately 3 to 5 meters.
61. (New) The method of claim 50, further comprising oxidizing gaseous hydrogen sulfide emissions from said methane fermentation zone to form sulfates by means of aerobic wastewater of said outer pond.

62. (New) The method of claim 50, wherein said methane fermentation zone comprises a bottom that is lower than a bottom of said pond.
63. (New) The method of claim 50, further comprising oxidizing gaseous hydrogen sulfide emissions from said methane fermentation zone using aerobic wastewater in said pond to form sulfates.
64. (New) The method of claim 50, wherein said wastewater flows out of said methane fermentation zone in an upward direction.
65. (New) A method of treating wastewater, comprising:
forming one or more inner ponds within an outer pond, said outer pond having a substantially open surface;
establishing one or more methane fermentation zones within said one or more inner ponds, wherein said one or more methane fermentation zones are disposed below said open surface; and
feeding wastewater into said one or more methane fermentation zones.
66. (New) The method of claim 65, wherein said forming comprises forming an outer pond comprising at least partially photosynthetically oxygenated wastewater.
67. (New) The method of claim 65, further comprising generating free molecular oxygen in said outer pond from growth of microalgae.
68. (New) The method of claim 65, wherein establishing comprises establishment of said one or more methane fermentation zones comprising semi-solid material in a highly reduced state to facilitate conversion to methane.
69. (New) The method of claim 65, further comprising deflecting oxygen from said one or more methane fermentation zones.

70. (New) The method of claim 65, further comprising deflecting oxygen to reduce intrusion of dissolved oxygen from said outer pond into said one or more methane fermentation zones.

71. (New) The method of claim 65, wherein said establishing comprises establishment of said one or more methane fermentation zones comprising facultative heterotrophic bacteria and methane bacteria.

72. (New) The method of claim 71, wherein said establishing comprises causing said facultative heterotrophic bacteria and methane bacteria to produce a gaseous emission.

73. (New) The method of claim 71, wherein said establishing comprises causing said facultative heterotrophic bacteria and methane bacteria to produce a gaseous emission comprising about 70% methane.

74. (New) The method of claim 65, wherein said forming comprises forming an outer pond that is about 4 to 6 meters deep.

75. (New) The method of claim 74, wherein said forming comprises forming an inner pond that is about 6 to 8 meters deep.

76. (New) The method of claim 75, wherein said forming comprises forming an inner pond that has a top surface area no greater than approximately 0.09 hectare.